

EXHIBIT 14

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1 There's a lot of variables with that,
2 mostly to do with latency and the vehicles moving;
3 is it quicker to process it there or shuffle that up
4 to the cloud, process it, and send it back down. So
5 there was statistics involved in that.

6 Q. I'm sorry, maybe I'm missing the point.

7 Can you explain how statistics -- maybe we
8 should back up.

9 What is your definition of "statistics"?

10 A. My definition would be looking at large
11 data and then gathering calculations and results
12 from that large data. You can either do it through
13 sampling. You can do it through -- there's
14 different models. You can run a cloud forest on it
15 to get your KNN clustering. But it really depends
16 on how the size of your data is and your format you
17 want out.

18 A lot of modern models when you have
19 p-cutoffs, you're going to generate, you know, ten
20 results out, and you're going to pick the top three,
21 for instance.

22 And that's how a lot of, like, a vision
23 system is looking at an apple in a text -- this is
24 an apple. It has top three answers. The apple is
25 top one. Orange and banana could be the next two.

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1 But we have a P greater than 05, so we know the
2 apple is the highest hit.

3 Q. By the way, you said p-cutoff and you used
4 the acronym "P," is that short for probability?

5 MR. HILLEGAS: Objection; form.

6 A. As I recall. We usually use, like, P less
7 than 05 is, like, the joke standard that something
8 is assured, but my wheelhouse is computer science.

9 Q. So then what does the "P" stand for?

10 A. I can't recall.

11 Q. What does "P less than 05" mean?

12 A. It means very, very likely. These two
13 things are -- or multiple things are very
14 correlated.

15 Q. You said you don't recall what the "P"
16 stands for.

17 Do you recall what the "05" represents?

18 MR. HILLEGAS: Objection; form.

19 A. Not off the top of my head.

20 Q. Besides recalling that it was a joke, what
21 else can you tell us that you remember about the
22 concept of P being less than -- "P less than 05"
23 meaning something is very likely?

24 A. Most of what I do is create models in code
25 and then deploy them, so my recollection of Intro to

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1 Statistics is foggy.

2 Q. We have talked about the classes that you
3 have taken.

4 Do you have any degrees or certifications
5 that are specific to statistical analysis?

6 A. That would be a math degree. I don't have
7 a math degree.

8 Q. You said it would be. I'm not asking you
9 specifically if you have a math degree. Some people
10 come out of college, for example, with a degree in
11 statistical analysis.

12 Do you have such a degree?

13 A. No.

14 MR. HILLEGAS: Objection; form.

15 Q. And then there's also certifications. I
16 know there's a long list of computer-related --
17 sorry, computing-related certifications listed on
18 your CV. We're going to look at it in a minute.

19 Do you have any certifications that are
20 specific to statistics?

21 MR. HILLEGAS: Objection; form.

22 A. I'm not aware of any.

23 Q. Have you ever held yourself out, as in
24 represented yourself as, an expert in statistical
25 analysis?

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1 MR. HILLEGAS: Objection; form.

2 A. I have not.

3 Q. Has anyone ever hired you as an expert to
4 perform statistical analysis?

5 MR. HILLEGAS: Objection; form.

6 A. I have been paid in grant money for
7 writing a paper. I don't know if I would consider
8 that hired in the strictest sense, but I don't want
9 to, you know, limit myself to what that was.

10 Q. The paper that you ultimately wrote with
11 that grant money, what was it about?

12 A. It was about smart city planning. That
13 was a large scale statistical model that placed
14 police patrols and police cars into LA County, and
15 this was based upon 13 years of LA County crime
16 records. I think it was, like, 30 million crimes or
17 so.

18 At that point, I figured out the severity
19 of the crimes. Obviously, you know, responding to a
20 murder versus responding to check fraud have
21 different severities.

22 So once I grouped them by severity, I then
23 ran a few KNN clustering to bring them into spots on
24 the streets in LA County where not only would be
25 responsive to crimes for each hour of the day, but

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1 also using Google Maps, they could plot to the next
2 stop the quickest using the traffic data at that
3 hour. And this was done Monday through Sunday every
4 hour of the day.

5 But the data was coming out of the
6 government, so the LA County data was really rough.
7 There were crimes reported in Las Vegas. There were
8 crimes reported in the middle of the ocean. So I
9 had to clean the dataset up quite a bit to get it to
10 a usable spot.

11 Q. What year was this paper written?

12 A. I think 2016.

13 Q. Do you know whether LA County implemented
14 your suggestions in the paper in terms of placement
15 of police and vehicles?

16 A. I never talked to LA County about it. I
17 did talk to Denton County about it, and they were
18 interested in a system similar for foot patrols.

19 Q. Did Denton County end up hiring you to do
20 that or --

21 A. No.

22 Q. Sorry.

23 -- or funding a grant in which you
24 ultimately did that?

25 MR. HILLEGAS: Objection; form.

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1 A. There's no statistics involved because I
2 wasn't sampling. If I was sampling, if I was
3 getting an end number from a larger dataset, then it
4 would have mattered, and that -- once you get to a
5 bigger end number, this had no sampling. I was
6 using all the data provided to me.

7 Q. The data provided to you was a subset of
8 custodians and a subset of days, right?

9 A. It was the entirety of what was produced
10 by Google.

11 Q. I I'll ask it a different way.

12 Out of the 141 custodians, you only had
13 data for five, right?

14 A. Correct. As I understand, the rest were
15 destroyed.

16 MS. NAJAM: Okay. And I'll object to
17 that as nonresponsive.

18 Q. Again, you're referring to the destruction
19 of something.

20 You're just talking about the fact that
21 these metadata logs are retained on a rolling basis,
22 right?

23 A. They're overwritten, correct.

24 Q. Okay. So I'm going to have to ask my
25 question again.

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1 Out of the 141 custodians that were
2 subject to legal hold, you only had data for five,
3 correct?

4 MR. HILLEGAS: Objection; form.

5 A. That was all that was produced.

6 Q. And out of the 365 days in a year, you
7 only had data for 68 days, correct?

8 MR. HILLEGAS: Objection; form.

9 A. Yes. I want to clarify. My calculation I
10 used 365.25.

11 Q. To average the amount -- the length of a
12 year?

13 A. Yes.

14 Q. Given a leap year every four years?

15 A. That's right.

16 Q. All right. We're going to use 365 for
17 convenience if that's okay.

18 Now you don't say in either of your
19 reports or your declaration that this is a
20 statistically significant sample set to extrapolate
21 to the rest.

22 I think I'm hearing you today your opinion
23 is that this concept of statistical significance
24 just doesn't matter here; is that right?

25 MR. HILLEGAS: Objection; form.

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1 A. Correct.

2 Q. But if we can do some math real quick.

3 Do you have a calculator handy, like your
4 phone, phone calculator?

5 A. My phone is not in here.

6 Q. Good. You followed your counsel's
7 instruction.

8 MS. NAJAM: Do y'all mind if I hand
9 him mine or do you want to hand him yours?

10 MR. HILLEGAS: I do not mind if you
11 hand him your phone.

12 Q. Okay. Here you go.

13 A. An iPhone.

14 Q. Okay. Multiplying the number of
15 custodians whose data you had times the number of
16 days that you had that data, that is 5 times 68.

17 Can you confirm for me that's 340?

18 A. That is correct.

19 Q. And then multiplying the total number of
20 custodians, assuming for these purposes it's 141,
21 multiplying that by the total number of days in a
22 year of 365, can you confirm for me that you get
23 51,465?

24 That is 141 times 365.

25 A. I think we want to divide.

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1 Q. Well, first I wanted to calculate days
2 times individuals in the log dataset, and then I
3 wanted to do days times custodians in the entire
4 population.

5 So, first, 5 custodians inside what you
6 had, the log dataset, times 68 days, that's 340,
7 right?

8 A. Correct.

9 Q. And then 141 custodians times 365 days.

10 A. Okay. So not -- so a separate
11 calculation.

12 Q. Yes.

13 A. 51,000.

14 Q. 51,465?

15 A. 465.

16 Q. And then if you divide those two numbers,
17 which I think you were jumping ahead, but we're
18 lawyers, we can't do that.

19 340 divided by 51,465. What percentage do
20 you get?

21 A. .66.

22 Q. So in terms of the log dataset, can we
23 agree that it is less than 1 percent of the
24 population dataset that you're extrapolating it to,
25 that is, 141 custodians for an entire year?

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1 MR. HILLEGAS: Objection; form.

2 A. Yes.

3 Do you need your phone back?

4 Q. Yes. Thank you.

5 So can you explain, sir -- first of all,
6 is it your opinion that your results, that is, your
7 opinion that 1.5 million chats were sent with
8 history off in a year by the employees on litigation
9 hold or 2.8 million, that that is reliable and
10 trustworthy even if the sample that you had is not
11 statistically significant?

12 A. I have seen no evidence to the contrary.

13 Q. So is that a yes? Should we -- can we
14 assume your results are reliable and trustworthy
15 even if they are not statistically significant?

16 MR. HILLEGAS: Objection; form.

17 A. I have seen no evidence to the contrary.

18 Q. I'm going to ask the question again.

19 Should the Court conclude that your
20 results are reliable and trustworthy even if they're
21 not statistically significant?

22 MR. HILLEGAS: Objection; form.

23 A. Statistics isn't involved in this because
24 there wasn't sampling, so my opinion is reliable.

25 Q. And you believe your opinion is reliable

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1 even if it represents less than 1 percent of the
2 total data -- sorry, total population of chats sent
3 by all the employees under litigation hold for a
4 year?

5 MR. HILLEGAS: Objection; form.

6 A. I have seen no evidence to the contrary.

7 Q. Can you cite to us any study or industry
8 publication or authority that would support that if
9 your sample set constitutes less than 1 percent of
10 your total population, it's fine to draw conclusions
11 from that less than 1 percent sample set that apply
12 to the rest of the population?

13 MR. HILLEGAS: Objection; form.

14 A. This is how most polling is conducted.

15 Q. Have you done polling before?

16 A. Yes.

17 Q. What kind of polling?

18 A. Political polling.

19 Q. And how -- tell me, what was your -- what
20 was your statistical basis in terms of making sure
21 that your sample set was going to be reflective of
22 the rest of the population within some confidence
23 interval?

24 MR. HILLEGAS: Objection; form.

25 A. It was vendor software. I didn't write

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1 the vendor software.

2 Q. So are you able to tell us how you made
3 sure that the folks being called were, in fact,
4 representative of the general population of voters?

5 MR. HILLEGAS: Objection; form.

6 A. The demographic software did that.

7 Q. Okay. So --

8 MR. HILLEGAS: Counsel, lunch has
9 appeared outside.

10 MS. NAJAM: Okay. Thanks. I'll wrap
11 this up soon.

12 Q. I'm sorry. So where we get off on this
13 political polling, are you telling me that you
14 participated in some political polling where
15 somebody decided that sampling less than 1 percent
16 of the population would be an accurate measure of
17 the remaining population?

18 A. So if we take 180 million voters in the
19 U.S., what is -- can I borrow your calculator?

20 Q. Yes.

21 A. What is our number? .66, I think, was the
22 number we arrived at times 180 million. So that
23 leaves 118,000 people that have to be polled to
24 determine an NBC news poll for president or
25 political party. Most polling is conducted with a

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1 MR. HILLEGAS: Objection; form.

2 A. It was not part of my assignment.

3 Q. And I'm not asking you whether someone
4 asked you to do it here.

5 Are you even qualified to do it is my
6 question?

7 MR. HILLEGAS: Objection; form.

8 A. It was not part of my assignment.

9 Q. You won't answer my question whether
10 you're qualified or not?

11 A. I have an opinion about the dataset which
12 was part of my assignment.

13 MS. NAJAM: Object to that as
14 nonresponsive, but we can move on.

15 Q. Let's go to your October report that you
16 call your supplemental report, Exhibit 1, page 35,
17 starting with paragraph 68.

18 Sir, I think you referenced this earlier.
19 But there is one Chat group where it had a
20 conversation produced that included Mr. Pichai where
21 you opined that 300 messages were lost.

22 Did I summarize that accurately?

23 A. Is this the triple A group?

24 Q. Are you asking me?

25 A. You said paragraph 68. I don't see where

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1 I say 300.

2 Q. If you skip to paragraph -- sorry, it's
3 taking me a second. Paragraph 77. Do you recall --
4 I'll ask a better question.

5 Do you recall that for a Chat conversation
6 that was produced that spanned December 8 to
7 December 9, 2022, that included Mr. Pichai, you
8 offer the opinion that 86 percent of a total of
9 around 387 messages were sent with history off?

10 A. That's correct.

11 Q. And then you opine, Consequently, messages
12 relevant to this litigation were lost due to the
13 toggle of the Retention Setting.

14 Do you see that?

15 A. Yes.

16 Q. As you established today, you actually do
17 not have any opinions on whether the unpreserved
18 messages were relevant to this lawsuit, right?

19 A. Relevant means to the dataset.

20 Q. I hear that you're saying today. But in
21 your report you wrote the words relevant to this
22 litigation.

23 Do you see that?

24 A. Yes, the context is this dataset, the Log
25 Dataset.

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1 Q. As I understand your opinions today, you
2 are saying that you are not opining that these
3 unsent -- sorry, unsaved messages, this 86 percent,
4 you're not here telling the Court that they were
5 relevant to this litigation; is that true?

6 A. That they were pertinent. I don't know.
7 I think I have one example from that -- from that
8 AAA group which was on the next page. No, back.
9 Yeah, Figure 11.

10 And as I recall, this is -- yeah, this is
11 from the same III group with the redactions in the
12 middle of it. So this was a produced Chat that
13 was -- my assumption, if it's produced, it's
14 pertinent.

15 Q. Okay. Did you actually go through the
16 Chat and make a determination on whether even one of
17 the produced messages related to ad tech or the
18 display ad's business?

19 A. No, I did not.

20 Q. Is it possible that literally none of the
21 messages in that produced conversation had anything
22 to do with the topics of this lawsuit?

23 MR. HILLEGAS: Objection; form.

24 A. Possibly but highly unlikely.

25 Q. Let me hand it to you then. I'm marking

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1 that as Exhibit 11.

2 (Exhibit 11 marked.)

3 THE WITNESS: Do these other ones
4 need --

5 MS. NAJAM: Just pass them down.

6 THE WITNESS: They don't need
7 stickers?

8 MS. NAJAM: No.

9 Q. So can you just confirm for the record
10 that Exhibit 11 is the produced Chat conversation
11 that you excerpted in Figure 11?

12 A. Yes.

13 Q. Can you point us to any message in this
14 produced conversation that has to do with Display
15 Ads or advertising technology?

16 A. (Reviewed document.) I didn't see
17 anything related with the word ad tech.

18 Q. I think we have established this. But
19 you're familiar with the various Google -- you're
20 familiar with Google's ad tech stack, right?

21 A. Yes.

22 Q. You're familiar with its publishers --
23 publisher-facing tools, its advertiser-facing tools,
24 its ad exchange. I'll pause there.

25 You're familiar with how they work?

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1 Q. Okay. But just taking -- just doing the
2 math, out of the 3.8 million that actually had date
3 and time metadata, if you remove the ones the system
4 flagged as exact or near duplicates, don't you end
5 up with roughly 1.8 million?

6 MR. HILLEGAS: Objection; form.

7 A. I don't recall from the 1.8 million that
8 were flagged as near duplicates, I don't think it
9 gave me any confidence on what they were as far as
10 duplicates.

11 But if we take 3.8 million and subtract
12 1.8 million, which let's say -- let's say each of
13 them is a duplicate. That gives us 900,000 and that
14 would be 2.7 million, if my math is right.

15 Q. Let me ask a better question.

16 Do you have an expert opinion in this case
17 on the -- sorry.

18 Do you have an opinion in this case on the
19 number of unique email messages that Google produced
20 in this lawsuit?

21 A. No.

22 Q. Okay. Now let's talk about Chat
23 conversations.

24 Any Chat conversation when produced will
25 include several individual Chat messages -- or can

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1 include several individual Chat messages, right?

2 A. Correct.

3 Q. And in this case, are you aware that each
4 individual Chat message is not going to be produced
5 separately?

6 A. As I understand production is of the
7 conversation.

8 Q. Which can include several messages?

9 A. Which can include several messages.

10 Q. Did you count up the individual Chat
11 messages that Google produced in this suit?

12 A. No.

13 Q. Can we agree that it would have been an
14 apples-to-apples comparison to count the number of
15 unique emails produced versus the number of unique
16 Chat messages produced?

17 MR. HILLEGAS: Objection; form.

18 A. Yes.

19 Q. And did you try to do that comparison?

20 A. I considered it but did not have the time.

21 Q. Okay. In your declaration that was
22 submitted to the Court, which we looked at a couple
23 moments ago on paragraph 23 -- I'm sorry, it's
24 paragraph 22 and paragraph 23.

25 Can we agree that it is not an

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1 apples-to-apples comparison to compare the
2 4.2 million emails produced versus the approximate
3 14 to 15,000 Chat conversations produced?

4 MR. HILLEGAS: Objection; form.

5 A. Correct. Also, with chats there was a lot
6 of missing metadata. A good percentage of it was
7 missing the date/time group metadata. And then
8 there was also the same issue with emails where
9 there was the duplicate of ones or exact matches.

10 Q. Okay. Now you noted in your declaration
11 in paragraph 23 that you didn't identify a single
12 Chat produced prior to 2010.

13 Do you see that?

14 A. Yes.

15 Q. Is it possible that some portion of the
16 over 4,000 conversations that were lacking the
17 date/time metadata that they were prior to 2010?

18 MR. HILLEGAS: Objection to form.

19 A. It is possible.

20 Q. And then I had a question about page 8 of
21 your declaration, paragraph 24, and then there's
22 some figures associated with this.

23 You observe that the year that the most
24 produced Google emails were created/sent is
25 different from the year that the most produced

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1 Google chats were sent/received.

2 A. Chat conversations.

3 Q. Okay. This says chats but you meant
4 conversations?

5 A. Yeah, based upon the figure above it.

6 Q. Okay. Perhaps I'm being obtuse or it's
7 just late in the day.

8 Can you explain to me what the point of
9 that analysis is?

10 A. This was to show a comparison between the
11 two productions.

12 Q. But can you explain to us why it matters
13 that the peak years for chats versus emails differs?
14 Are you drawing any additional conclusions from
15 that?

16 A. I am comparing them together. I am not
17 drawing any separate conclusions.

18 Q. Okay. Finally did you -- I say finally,
19 almost finally.

20 Did you review any Chat preservation
21 practices or policies for any of the plaintiff
22 states or territory?

23 A. I did not.

24 Q. Was that not part of your scope of work in
25 this case?

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1 STATE OF TEXAS)
2 COUNTY OF DALLAS)

3 I, Michelle L. Munroe, Certified Shorthand
4 Reporter in and for the State of Texas, certify that
5 the foregoing deposition of JACOB HOCHSTETLER was
6 reported stenographically by me at the time and place
7 indicated, said witness having been placed under oath
8 by me, and that the deposition is a true record of
9 the testimony given by the witness;

10 That the amount of time used by each party at
11 the deposition is as follows:

Ms. Najam - 6 hours, 16 minutes

12 Mr. Hillegas - 17 minutes

13 I further certify that I am neither counsel for
14 nor related to any party in this cause and am not
15 financially interested in its outcome.

16 Given under my hand on this the 17th day
17 of December, 2024.

18
19
20 
21

Michelle L. Munroe, CSR No. 6011

22 Commission expires 1-31-26

Firm Registration #571

23 VERITEXT LEGAL SOLUTIONS

300 Throckmorton Street, Suite 1600

24 Fort Worth, Texas 76102

817.336.3042 telephone
25